BRUHAT BANGALORE MAHANAGARA PALIKE

Name of the Agency : **Mr. H.S. Nataraj,** Contractor, Bangalore.

Name of the Work : Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.

Estimate Cost :

QUALITY CONTROL REPORTS TO

ASST. EXECUTIVE ENGINEER
Kodigehalli Sub Division,
BBMP, Bangalore.

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QUALITY CONTROL REPORTS FOR

WET MIX MACADAM (WMM)

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/Gradation/2014-15

02.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Mr. H.S. Nataraj,** Contractor, Bangalore.

Name of Work : Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8680**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	315	315	3.6	96.4	95-100
22.4	2345	2660	30.6	69.4	60-80
11.2	1970	4630	53.3	46.7	40-60
4.75	1255	5885	67.8	32.2	25-40
2.36	915	6800	78.3	21.7	15-30
0.600	725	7525	86.7	13.3	8-22
0.075	815	8340	96.1	3.9	0-8

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/Gradation/2014-15

02.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.

Agency : **Mr. H.S. Nataraj,** Contractor, Bangalore.

Name of Work : Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8745**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	285	285	3.3	96.7	95-100
22.4	2230	2515	28.8	71.2	60-80
11.2	1875	4390	50.2	49.8	40-60
4.75	1365	5755	65.8	34.2	25-40
2.36	940	6695	76.6	23.4	15-30
0.600	815	7510	85.9	14.1	8-22
0.075	760	8270	94.6	5.4	0-8

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02.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

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Agency : **Mr. H.S. Nataraj,** Contractor, Bangalore.

Name of Work : Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.

Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8620**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.8	96.2	95-100
22.4	2340	2665	30.9	69.1	60-80
11.2	1875	4540	52.7	47.3	40-60
4.75	1360	5900	68.4	31.6	25-40
2.36	915	6815	79.1	20.9	15-30
0.600	745	7560	87.7	12.3	8-22
0.075	830	8390	97.3	2.7	0-8

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GRADATION FOR WMM
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Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8590**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	275	275	3.2	96.8	95-100
22.4	2160	2435	28.3	71.7	60-80
11.2	1845	4280	49.8	50.2	40-60
4.75	1465	5745	66.9	33.1	25-40
2.36	945	6690	77.9	22.1	15-30
0.600	715	7405	86.2	13.8	8-22
0.075	835	8240	95.9	4.1	0-8

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GRADATION FOR WMM
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Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8790**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.7	96.3	95-100
22.4	2460	2785	31.7	68.3	60-80
11.2	1755	4540	51.6	48.4	40-60
4.75	1360	5900	67.1	32.9	25-40
2.36	950	6850	77.9	22.1	15-30
0.600	745	7595	86.4	13.6	8-22
0.075	825	8420	95.8	4.2	0-8

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Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8780**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.7	96.3	95-100
22.4	2650	2975	33.9	66.1	60-80
11.2	1345	4320	49.2	50.8	40-60
4.75	1470	5790	65.9	34.1	25-40
2.36	955	6745	76.8	23.2	15-30
0.600	825	7570	86.2	13.8	8-22
0.075	840	8410	95.8	4.2	0-8

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Reference : EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013

Date of Testing : 02.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **8500**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	325	325	3.8	96.2	95-100
22.4	2160	2485	29.2	70.8	60-80
11.2	1475	3960	46.6	53.4	40-60
4.75	1350	5310	62.5	37.5	25-40
2.36	915	6225	73.2	26.8	15-30
0.600	875	7100	83.5	16.5	8-22
0.075	820	7920	93.2	6.8	0-8

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02.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of the Work	Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	387	389	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	303	304	
4	Aggregate Impact value = percent fines	21.71	21.85	
	100* (W_2/W_1)%			21.78

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/AIV/2014-15

02.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
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Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	389	390	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	84	86	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	305	304	
4	Aggregate Impact value = percent fines	21.59	22.05	
	100* (W_2/W_1)%			21.82

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Aggregate Impact Value

IS: 2386 Part IV

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Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	390	391	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	88	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	302	306	
4	Aggregate Impact value = percent fines	22.56	21.74	
	100* (W_2/W_1)%			22.15

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Aggregate Impact Value

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Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	02.06.2014

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	388	386	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	85	89	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	303	297	
4	Aggregate Impact value = percent fines	21.91	23.06	22.48
	100* (W_2/W_1)%			

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/S-T/2014-15 02.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of Work	Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Result : Flakiness Index = **12.54%**

Elongation Index = **13.47%**

Result : Combined Flakiness & Elongation index **26.01%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/S-T/2014-15 02.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
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Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.56%**

Elongation Index = **13.47%**

Result : Combined Flakiness & Elongation index **25.03%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Job No.: CTCE/BBMP/HSN/W.No.07/WMM/S-T/2014-15 02.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
Agency	**Mr. H.S. Nataraj,** Contractor, Bangalore.
Name of Work	Improvements to Roads, Drains and Asphalting to Roads in Vinayaka Layout 1st Cross, 1st Stage in Ward No.07, Byatarayanapura, BBMP, Bangalore.
Reference	EE/BTP/BBMP/E-TND/447/2012-13 Dated: 16.03.2013
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Result : Flakiness Index = **11.82%**

Elongation Index = **13.63%**

Result : Combined Flakiness & Elongation index 25.45%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

Note:

→ This test report should not be reproduced except in full, without written approval of the laboratory

→ The results indicated above are based on the tests carried out on the samples received in the laboratory

→ Any Query regarding the report must be reported within 30 days from the date of testing.

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Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	02.06.2014

Result : Flakiness Index = **12.58%**

Elongation Index = **13.47%**

Result : Combined Flakiness & Elongation index **26.05%**

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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